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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,673

07/27/2006

Daniel Damson

3718

8468

7590  
Striker Striker & Stenby  
103 East Neck Road  
Huntington, NY 11743

04/27/2009

EXAMINER

MOMPER, ANNA M

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/587,673	<b>Applicant(s)</b> DAMSON ET AL.	
	<b>Examiner</b> ANNA MOMPER	<b>Art Unit</b> 3657	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7,9,10 and 12-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7,9,10 and 12-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. Amendment to the claims received 1/20/2009 has been entered. Claims 1, 10, 12, 13, and 14 have been amended. Claims 15 and 16 have been added. Claims 8 and 11 have been canceled.
2. Supplemental amendment to the claims received 4/06/2009. Claims 1, 4, 7, and 13 have been amended.
3. The previously made 112 2<sup>nd</sup> paragraph rejections made in the 10/27/2008 office action have been overcome by the amendments to the claims. The previously made 112 2<sup>nd</sup> paragraph rejections have been withdrawn.
4. Amendment to the specification received 1/20/2009 has been entered. The previously made objections to the specification have been withdrawn.

### ***Response to Arguments***

5. Applicant's arguments filed 4/06/2009 have been fully considered but they are not persuasive.
6. As per the arguments with regards to claim 1, the applicant argues that the prior art does not disclose the height of the inner tothing of the pulley is greater in every operating state than the tooth height of the teeth of the outer tothing of the vibration damping element.
7. The examiner maintains the stance that Iwabuchi et al. discloses the features as claimed. The tothing of the inner pulley being spokes 9, extend from an outer peripheral surface radially inward to connect with the hub. The vibration-damping

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element 10 is disposed between the outer peripheral surface and the hub and has tooth elements 10b which engage with tothing of the pulley. This vibration-damping element 10 can be seen in the pulley assembly cross sectional view of Fig. 1 wherein a gap can be seen between the radially outermost surface of the vibration-damping element 10 and the radially innermost surface of the outer pulley rim. As the height of the pulley tooth extends from the radially innermost surface of the outer pulley rim to the outer peripheral surface of the hub, and the height of the vibration-damping element tothing extends from the outer peripheral surface of the hub to the outer peripheral surface of the vibration damping element with a gap between the outer peripheral surface of the vibration damping element and the inner peripheral surface of the outer pulley rim, the tooth height of the vibration-damping element must be less than that of the pulley tothing (see rejection below).

***Claim Rejections - 35 USC § 112***

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claim 1 recites "in every operating state". This limitation renders the claim indefinite as it is unclear as to what is required by "every operating state".

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-7, 12 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwabuchi et al. (US 5,564,981).

As per claim 1, Iwabuchi et al. discloses a device (Fig. 1, Fig. 2) for transmitting torque comprising:

a pulley (6 with rim 7 for engaging a belt);

a hub (11);

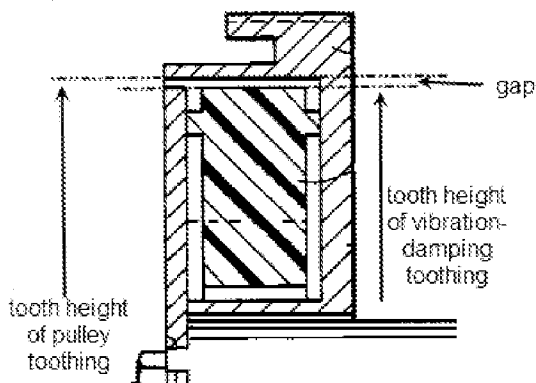
at least one vibration-damping element (10) located between the pulley and the hub (Fig. 1, Fig. 2),

wherein the vibration-damping element (10) is rigidly connected at its inner circumference with the hub (11) and is engaged at its outer circumference with the pulley (6, Col. 3, Ln. 4-7, Ln. 44-48, Ln. 60-68, the vibration-damping element engages with pulley 6 through recesses 10C for receiving arms 9 of pulley 6, the vibrating-damping element has recesses 10D allowing it to be rigidly connected to hub 11 through projections 11A),

wherein the vibration-damping element (10) has an outer toothing (10B) that is engaged with an inner toothing (9) on the pulley (6, Col. 3, Ln. 1-6), and

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wherein a tooth height of teeth of the inner toothing (9) of the pulley is greater in every operating state than the tooth height of teeth of the outer toothing (10B) of the vibration-damping element (see fig. below, there is a gap between the outer toothing of the vibration-damping element resulting in a tooth height of the outer toothing of the vibration-damping element being less than that of the inner toothing of the pulley).



As per claim 2, Iwabuchi et al. also discloses the vibration-damping element (10) is composed of an elastomer material (Col. 4, Ln. 25-33).

As per claim 3, Iwabuchi et al. also discloses that is well known in the art to vulcanize the vibration-damping element is vulcanized to the hub (Col. 1, Ln. 36-42).

As per claim 4, Iwabuchi et al. also discloses the pulley, the hub, and the vibration-damping element are configured so that, that during assembly, it is possible to engage the hub (11), with the vibration-damping element (10), and the pulley (6) using an axial relative motion (Col. 4, Ln. 34-43, Fig. 2, the device is assembled by sliding the pieces together axially in an order shown in Fig. 2).

As per claim 5, Iwabuchi et al. also discloses the vibration-damping element (10) is detachably engaged with the pulley (6, since the device is assembled by fitting the pieces together and there is no chemical bonding between vibration-damping element 10 and pulley 6, the two are detachably engaged).

As per claim 6, Iwabuchi et al. also discloses the pulley (6) is composed of a plastic material (Col. 4, Ln. 10-11).

As per claim 7, Iwabuchi et al. also discloses the vibration-damping element (10) is configured as a substantially annular element (Fig. 2, the vibration-damping element 10 is essentially an annular shape with recess provided therein).

As per claim 12, Iwabuchi et al. also discloses a tooth width of teeth (9) of the inner toothing of the pulley (6) is less than a tooth width of teeth (10B) of the outer toothing of the vibration-damping element (10, Fig. 2, the tooth width of the teeth 10B is the width between engaging recesses for teeth 9 of the pulley 6).

As per claim 15, Iwabuchi et al. further discloses the device is configured for transmitting torque from a pulley to a hub of an air conditioning compressor of a motor vehicle (the pulley is capable of transmitting torque from a pulley to a hub of an air conditioning compressor of a motor vehicle).

### ***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. Claims 9,10, 13 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwabuchi et al. (US 5,564,981) in view of Kamdem et al. (US 7,244,185 B2).

As per claim 9, Iwabuchi et al. does not explicitly disclose the tooth flanks of the inner toothing of the pulley and the outer toothing of the vibration-damping element bear against each other without play.

Kamdern et al. discloses a device wherein a vibration-damping element (2) having projections (20e, 20i) and a rim of a pulley (4) having projections (41) for engaging the recesses (22e) of the vibration-damping element (2) between adjacent projections (20e, 20i), have zero radial play between the engagement (Col. 4, Ln. 63-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Iwabuchi et al. to include the tooth flanks bear against each other without play, as taught by Kamdem et al., for the purpose of effectively transmitting torque.



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As per claim 10, Kamdem et al. also discloses the vibration-damping element (2) having projections (20e, 20i) with side flanks (22b) having a flared angle to form an hourglass shape (Fig. 2b, Col. 4, Ln. 11-17).

As per claim 13, Iwabuchi et al. also discloses the vibration-damping element (10) is located in the region between the hub (11) and a region of the pulley (6) having an inner tooth engagement with the outer tooth of the vibration-damping element (10).

Iwabuchi et al. does not explicitly disclose the vibration-damping element is form-fit with the pulley.

Kamdem et al. discloses a device wherein the vibration-damping element (2) is located between the rim of a pulley (4) and a hub (3) of the pulley, such that the vibration-damping element is form-fit with the pulley (Col. 4, Ln. 63- 67, Col. 5, Ln. 10-13).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Iwabuchi et al. to include the vibration-damping element is form-fit with the pulley, as taught by Kamdem et al., for the purpose of effectively transmitting torque.

As per claim 16, Modified Iwabuchi et al. does not explicitly disclose the angle being substantially 30 degrees. However, it would have been obvious to modify the device of Modified Iwabuchi et al. to include the angle being substantially 30 degrees, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In

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re Aller, 105 USPQ 233. Further, it would have been obvious to modify the angle in order to optimize the device for the stresses and the materials used in the system.

16. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwabuchi et al. (US 5,564,981) in view of Tabuchi et al. (US 2002/0132673 A1).

As per claim 14, Iwabuchi et al. discloses all elements of the claimed invention but fails to explicitly disclose the hub including an overload safeguard.

Tabuchi et al. also a device (10) for transmitting torque having an overload safeguard comprising of an inner hub (132) having a plurality of bridging parts (132c) which are set to be broken when the torque exceeds a predetermined value ([0024]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the device of Iwabuchi et al. to include an overload safeguard, as taught by Tabuchi et al., for the purpose of preventing damage to an accessory being driven by the device.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNA MOMPER whose telephone number is (571)270-5788. The examiner can normally be reached on M-F 6:00-3:30 (First Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on (571) 272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley T King/  
Primary Examiner, Art Unit 3657

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